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Teaching the Entrepreneurial Art

Alistair R. Anderson and Sarah L. Jack

"I would suggest that successful entrepreneurship is an art form as much as, or perhaps more than, it is an economic activity, and as such it is as difficult as any other artistic activity to explain in terms of original method or environmental influence" .

Livesay 1982:13

Entrepreneurship is increasingly recognised as being vital to the regeneration and development of our economies. With the advent of the so-called "Enterprise Culture" (Keats and Abercrombie 1991), there has been widespread acceptance that entrepreneurship is the engine that drives the economy of most nations (Gorman, Hanlon and King, 1997). Entrepreneurship is perceived to bring benefits at both the macro level of economic development and also at the micro-level of personal achievement and satisfaction, (Anderson, Kirkwood and Jack, 1998). The development, and indeed the pervasion, of the Enterprise Culture has brought about academic interest in supporting this new emphasis. This paper explores some of the issues surrounding enterprise in academia by examining the teaching of entrepreneurship at Aberdeen University.

The paper first compares the rhetoric and the reality of entrepreneurship, it then moves to consider a conceptualisation of entrepreneurship. Central to the argument is that entrepreneurship is important, but that its very nature means that it is idiosyncratic and unpredictable. Teaching entrepreneurship thus becomes problematic, since it is both art and science. The *science*, which is largely seen as small business management, can be taught within the conventional pedagogy. However, the *art*, the very nub of entrepreneurship, of creation and innovation, does not appear to be teachable. This aspect is inductive and in bold contrast to the rational deduction of resource management. It is highly subjective and involves perceptual leaps which may transcend a conventional economic rationality. This vital aspect is caricatured by Schumpeter's oxymoron, the Creative Destructor.

Accordingly as academics we cannot directly provide, or teach this skill, it is fundamentally experiential. Jerry Katz' seminal article (1991), makes the point that there are, most likely, skills which can be taught and some that cannot. However we can furnish our students with the opportunity to observe the operation of this ability. The exposure to practising entrepreneurs allows students to perceive, to question and to absorb the form of this art. In turn we anticipate that students will be able to use their acquired management skills, their theoretical and their conceptual awareness, (all of which we can teach), to bear upon the art as demonstrated by the entrepreneurs. We see our entrepreneurial teaching role as having three elements. First the science of management, to provide a critical awareness of how businesses work. Secondly to develop conceptual awareness through the academic literature of the nature of enterprise and thirdly to provide a bridge to tap the rich experiences of real and practical entrepreneurial action. This view reflects Ryle's comment, (1963) about the important difference between knowing that and knowing how; to this we wish to add knowing why.

Although there is a clear indication of considerable growth in entrepreneurship courses and programs there is very little consistency in approach, (Gorman, Hanlon and King, 1997).

There is also preliminary evidence that entrepreneurial attributes can be positively influenced by educational programs and that many entrepreneurship programs and courses are able to build awareness of entrepreneurship as a career option and to encourage favourable attitudes toward entrepreneurship. Nonetheless, the case for teaching entrepreneurship might be strengthened if it was clear what qualities make for success in business-and therefore what should be taught and which pupils might benefit from lessons, (The Economist, 1998).

Education also can serve a preparatory function in relation to new venture initiation or start-up, whereby the transfer of knowledge and the acquisition and development of relevant skills would be expected to increase the self-efficacy (Bandura, 1986) and effectiveness of the potential entrepreneur. In addition, this preparatory role can be extended to include preparation for small business management of existing owner/ managers, as well as potential entrepreneurs. Educational process and structure also should be important variables for inquiry. For instance, we might expect the entrepreneurial learning process to be enhanced through the provision of role models, the expansion and strengthening of personal networks, and through temporary apprenticeship placements.

The context of teaching entrepreneurship within an old and long established academic institution is also discussed in terms of the effects of the culture and attitudes. However the focus of the paper is the third element, the links from academe to experience. It explains the methods and techniques used at Aberdeen to bridge the gap of art and science and discusses the successes and failures. As Baumol (1983:30) puts it "How can one analyse and teach acts whose nature is not yet known and whose effectiveness relies to a considerable degree on the difficulty others have in foreseeing them?"

The Demand for Entrepreneurship Education

The 1980s and 1990s have seen an unprecedented growth in the demand for enterprise education which has been matched by a corresponding growth in the number of courses offered by both academic institutions and by enterprise agencies of one sort or another, (Curran 1986). We wish to argue that this development is a consequence is a result of a variety of inter-related changes in the national and international economy. We identify four sources of demand, but have become acutely aware of the potential conflict between these areas. In part this is consequence of the woollyness of the entrepreneurial concept. Entrepreneurship has become an omnibus word, an overloaded concept and one that carries a variety of meanings which pundits pick and choose from at will. Its meaning ranges from small business operation, through new venture creation to innovation and individualism. As a heuristic the breadth of the concept allows it to be used in diverse rhetoric, explanation and justification. (Anderson 1995). To borrow an expression of Terry Eagleton's (1991), it has become a text, woven from a tissue of conceptual strands.

The first source of demand we have identified is governmental. This is primarily economic and driven by the shift towards a post fordist economy. Flexible specialisation; corporate downsizing, business re-engineering couple with individualism to be seen as a solution to the failures of the old collectivism. This "new capitalism" is identified by the Marxist, David Harvey (1989:174), as Schumpertian innovation, the driving force of the post-industrial paradigm. Fitzgerald 1993:77 notes the importance of management education for national economic health. He points out that the Braverman (1974) deskilling thesis has never be validated and that on the contrary, has been inverted by the need for enhanced skill levels. Cannon (1991:149) suggests that enterprise provides the government with, "a quick publicly demonstrable, transaction based reaction, not a strategic response". In contrast it has been argued that enterprise culture develops naturally, (Hynes, 1996). However, given the recognition of its importance we cannot solely rely on this passing on of knowledge, resulting in the need to provide interventions to promote an entrepreneurial culture and entrepreneurial knowledge.

Job creation is major focus of this element. Timmons (1994) in the USA, Storey (1994) and Roure (1997) all build, though critically, upon Birch's (1979) seminal analysis that new jobs in the economy are most likely to arise from entrepreneurial small firms. Innovation is also important; Johannison, (1987) notes that innovation cannot be planned by large corporatist institutional processes. Drucker, (1985) reinforces the point that innovation and entrepreneurship go hand-in-hand. All this reinforces Anderson et al's, (1998) point that the conditions of the 1990s mean that small business and entrepreneurship can no longer be seen as marginal to modern economies. Hynes, (1996), puts this strongly, claiming an the emergence of an SME economy, which leads to the need to prepare and educate potential entrepreneurs to identify opportunities in the environment, and provide them with the knowledge and skills necessary to capitalise and manage these opportunities. One outcome of this concern in Scotland is the low level of the new business birth rate which has caused political concern, (Scottish Enterprise 1995, 1996). This resulted in the implementation of the Scottish Birth Rate Strategy, which aims to create an "Enterprise Culture" throughout Scotland. A further interesting point is made by Rosa, (1992), that the process of enterprise development and enterprise education is not so much the process of developing individual businesses, but the process of developing the first, people who potentially own and actually run these businesses and secondly the people who may work in these businesses.

We also detect a subsidiary thread to the political economy of entrepreneurship education, the production of the friendly face of capitalism. The ideology of capitalism had suffered in the post war years. The enterprise culture provided an opportunity to reassert its value. Curran and Burrows, (1987:180) refer to the "remoralisation and recapitalisation of capitalism". Burrows, (1991) claims that this discourse has become, "one of the major articulating principles of the age". Goss, however, rather cynically notes, (1991), that the Enterprise Culture's affection for small business is rooted as much in the latter's intangible qualities as in precise measures of its effectiveness.

The second source of demand is that of the students. Young (1997), suggests that there are two sets of reasons why students may want to study entrepreneurship. First, the student may plan to start up their own business; secondly, they may wish to acquire knowledge which will be helpful in their careers in larger organisations. Tan et al (1995), even propose that some students may be attracted to enterprise learning as an insurance against an economic downturn. Furthermore as Timmons (1994:vii) notes in the USA about one in eight is self employed and the vast majority of the two million "millionaires" in the US have accumulated their wealth through entrepreneurial acts of self employment. Thus it comes as little surprise to find that the Gallup report, (1994), claims a demand for entrepreneurship education from students. Some 85% of their respondents indicated a desire to learn more about entrepreneurship. This is confirmed by the cross cultural study by Weihe and Reich, (1993). Obviously this must be set in the context of the reported change wise". In particular we see being "street wise" as being aware of the non-linearity, Berger (1990), of entrepreneurial learning. Another aspect is the need for a creative attitude to work, but its acquisition and development is a quality rarely taught by professional educators (Pietrasinski, 1969). Time and time again we hear the business community complain, perhaps with some justification, that our graduates have no real business knowledge. So enterprise learning is specifically charged with the duty of providing graduates "who can hit the streets running".

The fourth is even less precise but is usually couched in terms of personal achievement. Small business is unique in its ability to combine an individual's skills and aspirations. Even the Marxist, Warren (1980), recognised that capitalism's greatest achievement has been to release individual's creativity. Furthermore Schumacher's classic (1973) saw small business as the nostrum for the alienation of the modern world. At the level of the individual entrepreneurship is seen as overcoming the barriers and obstacles of class, race and gender. (Aldrich *et al* 1986, Stanworth and Curran 1973, Waldinger et al 1990, Hyrsky and Ali 1996). Entrepreneurship is also viewed as a means of satisfying an individual's "inner needs"; notions of satisfaction, fulfilment and achievement echo throughout the literature, (Scott and

Anderson 1994). Rosa, (1992) adds that within this view the relationship to business is not paramount.

It will be evident that these different constituencies of demand for enterprise education present very different, even incompatible, claims for what should be the outcome of this education. We follow Gibb's point that the overriding aim of enterprise education is to develop enterprising behaviours, skills and attributes and by this means also enhance our student's insight into, as well as knowledge of, any particular phenomenon studied (Gibb, 1993). However it has been argued that there has been more faith than strategic reasoning in the development and implementation of enterprise and entrepreneurial education and training in the UK during the 1980s, (Rosa, 1992). At one level we see new businesses, at another creative individuals who think for themselves. At yet another level, we note the need to see more new high growth firms. This is a heady curriculum to develop!s in career structures; the end of jobs for life.

The third source of demand for entrepreneurial education is business itself. Ian Grant, the Managing Director of Aberdeen Enterprise Trust (1993) puts this plainly, "It is important that universities search for excellence, but at times the university may omit to provide an understanding of basic commercial issues..... it is important for graduates to leave being "street

Issues in Teaching the Art and Science of Entrepreneurship

This range of issues raises questions about what "entrepreneurship" comprises and how, and if, it can be taught within the conventional pedagogies. The demands outlined above appear to range from a science of business management to the necessarily imprecise notions of creativity; this art of entrepreneurship. Clearly entrepreneurship has to be different, or at least more than managerialism; there is something distinct which reaches beyond the effective allocation of resources. Yet we must also recognise that successful business creation also demands managerial competencies. Assuming that we acknowledge that entrepreneurship is more than the basic and pragmatic skills to simply slot into a new business, the difference seems to lie in the novelty, the creation of new ventures, either as new businesses or as new ventures within existing organisations. We may characterise this as opportunity perception, developing these ideas into viable opportunities and pulling together resources to make these real. Nonetheless this creative process is not independent of managerial knowledge. Knowledge, and experience, is the basis for assessing what is possible, what is realistic and what is achievable.

Moving beyond the mere description of the entrepreneurial process to an analytic level has long been problematic. Gartner (1985) found over eighty definitions of entrepreneurship but a pragmatic view suggests that entrepreneurship is, "the creation and extraction of value from an environment", Anderson (1995). Given this view we can see the emergence of the twin entrepreneurial themes; of art- the creation, and of science- the management to effectively extract value. The literature, albeit indirectly, appears to support this perspective.

The Science

The science of small business management, or indeed management, is well established and needs little comment. In the "ideal typification" teaching involves explaining the functions of management, the presentation of techniques and models of good practice, and evaluating student's ability to apply this knowledge to a historic or a make-believe situation. Mintzberg, (1994) for example considers that in many MBA programmes the emphasis is on teaching about concepts and the administration of functional areas. French and Grey, (1996) whilst acknowledging changes, note that the idea of management education as functional to management is predicated on a model of professional training in which there exists a body of

knowledge which is understood to be central to effective practice. They note that it may be common ground to say that management is concerned with achieving organisational aims. Nonetheless, as George (1968), summarises the science of management is rooted in the ideas of F.W. Taylor's Scientific Management. Locke 1993:31 also argues that the classic American Management was based upon what can be interpreted as Taylorist principles of Scientific Management. This system which although arguably well suited for large hierarchical organisations, is very poorly suited for the fast moving, innovative sphere of entrepreneurship. Consequently as George (1968) claims, Taylor's principles of scientific management were about standardisation, finding the one best way. Casson (1995:83) puts this uncompromising view into an entrepreneurial perspective, "But it is the *perception*, as well as the reality of problems which is important. Shackle, (1979) makes a similar point about the subjectivity of problems and the limitations of a narrow view.

The traditional management education is positivistic, as Outhwaite (1987) puts it, "Positive knowledge, so called to distinguish it from the theological and metaphysical conceptions of the world from which it emerged, yields a methodologically unified and hierarchical conception of science, based on causal laws of phenomena, derived from observation." Yet as Johannison (1992) notes entrepreneurship is anti-positivistic and that entrepreneurial knowledge may be soft and personal. Thus we see the limitations of the science of management education in dealing with the unknowability of entrepreneurship. As Casson (1995:80) puts it, "Judgmental decisions are decisions for which no obvious correct procedure exists: a judgmental decision cannot be made simply by plugging available numbers into a specific formula and acting on the basis of the number which comes out".

Yet even within this paradigm there are grey areas. Englwall, (1982) claims that management education is torn between the liberal and the utilitarian concepts and hence claims advantages in de-coupling management education and management practice. He sees this as a reflection of a need for less skills and more analysis. French and Grey, (1996) note that conventional management education, that is functional training as one would expect in an MBA, is becoming more professionalised. However the question whether management can be taught seems to them to be almost as important. They ask, (1996:7) whether knowledge is an end, as Cicero claims, or if knowledge is a means, as John Locke insisted. Similarly Ronstadt (1990:80), claims, "Entrepreneurship education should not be viewed as some mechanistic or technocratic process but as a holistic and integrative process". Later he notes, (1990:92) that entrepreneurship is not the sum of the functional subdivisions of modern business education. Robert Locke (1996) is particularly critical of what Winston Churchill called, "clear cut, logical, mass production style of thought", taught by American style business schools. Solomon and Fernald 1991 point out that in the USA, the business courses of many colleges and universities were criticised because of their lack of creativity and individual thinking. For example, Wojhan 1986, claims that "tools", rather than practical advice, and "analytic smarts" rather than "street smarts" were the outcome of many of these courses.

The Art

The entrepreneurial process is recognisably different from managerialism; in essence it is about creating something which did not exist before. The process involves, as discussed earlier, "the extraction of value from the environment", and usually in a novel form. Hence it is about using resources in a different, a Schumpertian, way. It is a process of becoming, not the stasis of being. Consequently it cannot be predictable; its generic form is unstructureable; it is unknowable and hence unpredictable. The principal dilemma then is that enterprise is idiosyncratic, and therefore closer to an art than a science.

Consider Nisbet's comments, (1976:111) on rationality, "the imposition of end-means criteria not only upon thought but upon art, science ...it implies the exclusion from thought or act of all that is purely traditional, charismatic or ritualistic." He is clearly dissatisfied with this "scientism", he derides it, as science with the spirit of discovery and creation left out. He concludes 1976:76 that "We live in a world of ideas." So entrepreneurial creation appears to

share a great deal with artistic production and might well be thought of as an economic art form. Timmons (1994:329) suggests that entrepreneurial resources are like the paint and brush to the artist, they remain inert until the creative flair engages with the canvas. Yet as Chia (1996) puts it, the cultivation of entrepreneurial imagination is the single most important contribution of Universities and Business Schools.

At the most extreme version of this argument even dreams may be a raw material of enterprise, very often what has to be created entrepreneurially presents a formidable task, yet the freedom of fantasy allows gratifying impressions to develop in comfort and safety. Dreaming permits a freedom to roam over possibilities and potentials without cost. Importantly it allows the first heady fruits of success to be savoured in a risk free environment. Moreover, because the end results can be envisaged as a stream of benefits, which may play down difficulties, dreams can provide a major impetus to realise these fancies. The surreal world of dreams is irrational, illogical and one without limit, where everything is possible. Dreams may be a precursor to enterprise. Since fantasy is not based on economic rationality the unfolding enterprise may also be rooted in grounds other than conventional rationality. The entrepreneurial dream may, for instance, originate in concerns for quality of life, or of self determination, aspects which are distanced from the cash nexus. Accordingly fantasies may shape the purpose and objectives of the new business. The enterprise may be a means to achieving a fantasised end.

Another incongruity which arises in these conjectures on the metaphysics of entrepreneurship education is the similarity in the creative activities of the artist and the entrepreneur. To borrow Baudelaire's (1981:435) formulation, the artist is someone who can concentrate his vision on ordinary subjects, understand their fleeting qualities, and yet extract from the passing moment. Or as Harvey quotes Bradbury and McFarlane (1976:27), "it is the one art that responds to the scenario of our chaos." Harvey again, (1989:22), "The struggle to produce a work of art, a once and for all creation that could find a unique place in the market, had to be an individual effort forged under competitive circumstances." Each of these comments could be describing entrepreneurship rather than art. This seems to reflect Sexton's (1985) concerns in, "The Art and Science of Entrepreneurship". Nisbet (1976:95), in his explanation of sociology as an art form, claims that "painters and sculptors were engaged in endless effort to capture flux, motion and energy." He calls this the principle of *vix genetrix*, a notion of motion and constant continuous development. Yet this description so vividly describes the entrepreneurial process.

Koestler 1980:364 draws attention to the links between conceptualisation and creation. He provides some evidence of the range of creative forms. "In 1945 Jaques Hadamard's famous enquiry amongst American mathematicians produced the striking conclusion that nearly all of them tackled their problems neither in verbal terms or algebraic symbols, but relied on visual imagery of a vague and hazy nature." He continues, quoting Carlyle "the infinite is made to blend with the finite, to stand visible, as it were attainable here." This latter expression seems to capture the essence of enterprise, although Koestler's remarks are directed to art.

Ronstadt (1990), raises the issue of American higher education in the liberal arts and claims that rather than promoting an entrepreneurial perspective, business is marginalised. Ray (1990), takes up this point but claims that, (1990:80) "an education in the liberal arts may be viewed as a metaphor for entrepreneurship. The humanities suggest that the entrepreneur is an artist"

If our version of the art of enterprise is accurate, the conventional mechanistic "science" outlined earlier provides a very poor basis for entrepreneurial action. Therefore we must question whether we can *teach* entrepreneurship, or if we can only provide skills and knowledge to enable and empower an emergent business acumen of our students.

The analysis and synthesis of entrepreneurial art and science

Gibb (1996:311), makes the telling point that few business schools are in a strong position to meet the challenges of teaching an entrepreneurial holistic management approach. We take the view that the rationality of entrepreneurship is action, the physical creation of a new business entity. The conventional role of universities is to provide a theoretical understanding, a conceptual grasp of the phenomena, but we must also question the relevance and value of an overtly theoretical approach to a subject which appears to deal almost exclusively with doing. Furthermore the lack of business experience in academe, which is typical of management lecturers, (Simon 1976, Macfarlane 1998) may exacerbate the situation. This is particularly so in combination with lack of student experience might lead to over reliance on theory, when what is needed is practice. Young (1997) usefully defines entrepreneurial education as the structured formal conveyance of entrepreneurial knowledge. Entrepreneurial knowledge is the concepts, skill and mentality individual business owners use. Our point is that it may not be possible to acquire the skill, or indeed the mentality by conventional pedagogic routes.

Raising awareness of entrepreneurship is relatively straightforward and can be achieved through teaching examples, case studies and by bringing entrepreneurs into the class. Similarly teaching entrepreneurial theory and good management skills conforms to academic norms. However there are pedagogic difficulties in teaching the practice of enterprise. In part this is because of the variability within enterprises, (Freel 1998), in part because entrepreneurship is process rather than stasis. Hence we can only glimpse a snapshot of the movie. Furthermore there is also a recognition that much research needs to be carried out into what makes an entrepreneur and how these characteristics may best be imparted (Gorman, Hanlon and King, 1997).

One area Robinson and Haynes wish to see addressed is (1991:51), “tying academic learning to the real world”, linking pedagogical theories to actual business methods. They propose that mentoring may be one such avenue. However before we become to entangled in pure experience alone we would do well to recall, as Locke (1993), points out, that the business educational paradigm for the 19th century was the British model of learning by doing. This model, one of training, rather than education for a life role, had the effect of limiting economic development. Nelson (1993:174) makes a similar point to Locke. He cites John Davidson Rockefeller’s (1855) success to experiential learning but contrasts this to Rockefeller’s son John D.jnr. success which he attributes to training for management, the mastery of theory as well as technique. From a British perspective Allan Gibb 1993:18 notes that the small firm itself is a learning organisation and that the learning environment is “learning by doing”. More formal knowledge is therefore “adapted” as appropriate for business needs. Hence the model proposed emphasises self-discovery, what he calls an “enterprise” style of learning, in opposition to a more formal didactic approach.

Moreover the integration of these elements is difficult. It is not enough to simply use case studies or “*listen to very successful entrepreneurs recount how they had launched their ventures*” (Fiet, 1998). We need to teach students theory to support their practical learning experience. We need to provide a conceptual background which allows students to understand and to engage with the real business world. Fiet proposes, that if we are to improve the substance of what we teach to students studying entrepreneurship, we need to 1) pursue theory-driven research agendas and be actively seen to do so and 2) expose students to theoretical explanations of why some entrepreneurs succeed and others fail.

Much more of our research should be theory-driven rather than descriptive and we should integrate research findings and theory in a way that can be understood and applied by students (Fiet, 1998). Fiet claims we become irrelevant as teachers, when we fail to apply theory as a tool to answer student questions. Thus research and teaching should be theory-driven rather than descriptive and we should integrate research findings and theory in a way that can be understood and applied by students (Fiet, 1998).

Much of this argument is not new, Porter and McKibben (1988) drew attention to this question of academic drift from the real business world,. Furthermore the Carnegie Foundation, (1990) drew attention to the need to synthesise business practice and teaching. Indeed the conclusion of this study was that we should ensure that students continue to learn beyond the walls of academe, (Gibb 1996). Furthermore research indicates considerable consensus that entrepreneurship can be taught and that teaching methods can be enhanced through active participation (Gorman, Hanlon and King, 1997).

Thus in summary we see the science of conventional business education as a fundamental; conceptual development as the promotion of business understanding; theory as producing a critical awareness; and experience, albeit second hand and vicarious, as being the steel to whet and hone the rougher edges of student's knowledge. The emerging picture of the mandate for teaching entrepreneurship is one of academic knowledge, both conceptual and analytic, as providing a sound platform. It is from this platform that we launch our students into the turbulent and untidy world of small business experience. Hynes may claim that understanding is derived from personal experience, and learning is obtained through doing (Hynes, 1998). But Rosa's point that although entrepreneurs must have "enterprising" attitudes to want to start the businesses in the first place, they must also possess the "enterprising" attitudes and competencies to enable the person to thrive in business once the firm has got off the ground (Rosa, 1992) seems very pertinent. The "rite de passage" of experiencing the real small business world is not enough, in itself, to produce the outcomes we seek. However it is within this experiential element that we need to loosen our academic apron strings to let our students imagination soar. Hence it is the combination of the science of business management knowledge, the dirty-handed world of business experience and the inspirations of our students which will the develop the enterprising student. It was Socrates who described himself as a midwife, helping people to give birth to their ideas , (Gosling 1996). We would do well to emulate him.

It seems then what we can hope to teach is a skill set, based on a platform of conceptual knowledge. Kourilsky and Carlson, (1997:194) consider that specific entrepreneurial programmes, (in contrast to more general business education), should consist of three progressive elements;

1. Entrepreneurial awareness, this is characterised as the introduction of basic entrepreneurial concepts and skills and introduces awareness of entrepreneurship as a career option.
2. Entrepreneurial readiness, is about promoting comprehension and the application of concepts and skills and develops recognition of personal venture opportunities.
3. Entrepreneurial application, which applies advanced skills to the planning and preparation for implementing a personal business venture.

The components of the ideal structure include the following: a knowledge base supporting a focus on attributes and skills as well as tasks, an element of concrete experience derived from active participation through projects and the like, and content directed to stage of venture development and emphasising functional integration. Thus following Hannon's point, (1998) that entrepreneurial learning processes should be embedded in an adaptive environment.

What we do at Aberdeen

Aberdeen University is an old traditional university, with the implications of the associated cultural ramifications. For example, we do not have a Business School but instead a department of Management Studies. There is a "hesitancy" about the value associated with teaching a vocational subject. (However this is in spite of teaching medicine, law and divinity for centuries!) We have had to work hard to convince our colleagues, particularly outside our own faculty of the value and appropriateness of our courses. This said many other faculties

now share our enthusiasms. We teach entrepreneurship to Bio-medic PhDs; Pharmacologists; Environmental Scientists and Zoologists. Next year we are to have final year medicine students for a four week block of enterprise.

We realise the limitations of our own experience, although two of our lectures run small businesses. We attempt to bridge this gap between theory and entrepreneurial practice using a number of techniques. To compensate we capitalise on rich external sources of entrepreneurial experience. We have many visiting entrepreneurs; we advise students on research in small business and encourage students to engage with small business and entrepreneurs at every opportunity. At the same time we attempt to build theory into every learning activity as a critical framework, aiming to develop the students understanding of entrepreneurship.

The Centre for Entrepreneurship, part of the Department of Management Studies, primarily offer courses in entrepreneurship to students at both undergraduate and postgraduate level. Within their degree students can opt to do the following courses:

- **Enterprise Creation 1 and 2** - We have a portfolio of Scottish and international entrepreneurial case studies and other teaching materials. Through analysis of these cases and associated exercises students learn, individually and in groups, to integrate knowledge and skills required to identify, plan and seize a business opportunity. The development of oral and written communication skills through preparation and presentation of project and business plans is also a central focus of these courses. Entrepreneurs are invited into the classroom to share their experiences and students are also directed towards a resource room to investigate companies, successful small business development and entrepreneurial opportunities. The key mechanism of learning is the development of a viable business plan. Importantly it is the process of producing the plan, using the acquired knowledge, which is central to these courses.
- **Conceptual Approaches to Enterprise** - The course provides students with the background theory necessary for understanding the field of entrepreneurship. It looks at a variety of theories of entrepreneurship: sociological, cultural, anthropological, economic, political and psychological. Students learn, discuss and critically evaluate these theories. One focus is to question the feasibility of a single theory to account for and to explain entrepreneurship. The purpose of this course is to increase the awareness of the students to entrepreneurship but also to raise their critical analysis skills. Students should be able to recognise, and explain patterns of entrepreneurship and have some understanding of why these have arisen.
- **Business Development** - This course involves analysing the problems of growing businesses and the issues which the entrepreneur is likely to encounter. Case studies, specially researched in the Scottish context are used. Most of these cases focus upon the recent experience of Scottish companies in a range of sectors. Students are invited to compare and contrast these case studies. Entrepreneurs, often those who feature in the cases, are also invited into the class room to share their experiences. This provides the student with the opportunity to question them directly and to use the knowledge they have acquired directly and in a critical and analytic manner.
- **Smaller Business** - At the MBA level we also teach an elective whose focus is rather different, an appreciation of SME's. This is a post experience course so that the students who choose to do this elective have considerable commercial experience, although not always in small business. We did not expect many potential entrepreneurs to select this as an elective whose objective was to make students aware that SMEs are different from larger organisations. However we were delighted that some of our group had their own business and many were considering it as a career option. Their experiences provided an excellent framework for the critical analysis of cases and theory.

- **Enterprise for Scientists** - This is new course which is intended for post graduates who have no management background. The ethos is to raise entrepreneurial awareness, to encourage them to think about an entrepreneurial career. Interestingly this course has become quite popular despite the initial reluctance and misgivings of many of the students. In particular the PhD students wondered about its relevance to their careers but after the delivery of the course they reported satisfaction and saw the value.

We are also involved in a number of other activities which help to promote entrepreneurship to both our student population and the outside business community. These include:

- **Mentoring** - the mentoring programme which has been established has two related aspects. The first role is to provide academic support by an identified experienced academic. The second role, which we see as being innovative, is to complement the conventional academic learning with the business experience of our entrepreneurial mentors (for a fuller account of mentoring at the University of Aberdeen see Anderson, Kirkwood and Jack (1998)). Thus our entrepreneurial mentors provide real life experience to complement, (or indeed to contradict!) our theory.
- **Steering committee** - the entrepreneurship programmes offered have been developed and designed in conjunction with a steering committee which consists of academics and members of the local business community. This body is involved with many aspects of what we offer and encourage the development of entrepreneurship from a commercial perspective.
- **“Talking heads”** - we invite members of the local business community to talk to our students, staff from the local enterprise companies and encourage them to engage in debate about entrepreneurship. Again this provides “experience” of live situations, and sometimes it also acts to provide inspirational role models.
- **We hold an entrepreneurship dinner once a year.** This provides a relaxed forum for discussion and the exchange of ideas. Our guests, or rather our sponsor’s guests, since they pay for the dinner, include enterprise and non enterprise students, our mentors, the steering committee and the management faculty.
- **Presentations** - students are invited to present their work throughout all the courses offered by the Centre for Entrepreneurship. Initially this is to staff, but the best groups present to commercial judges in competition for a number of prizes.

Problems

Some of the we have encountered are:

- There is a lack of good business ideas and a tendency for low skill, low barrier to entry ideas to be proposed. This suggests that we have to find some way to make our students think beyond the more obvious ideas.
- Additionally, we have found that there is a vast amount of work required to generate a viable business plan. However, if the students are motivated and enthused they seem to accept this happily.
- Another issue is that we have few ways of testing the effectiveness and efficiency of what we teach. We can measure entrepreneurial awareness and test student’s knowledge and find out about their satisfaction with our courses. However we have not yet been able to establish the long term outcomes.
- It can also be difficult to realistically evaluate business plans. We have rely on the surrogate academia evaluation, although our increasing experience is proving helpful.
- Within academia and the old university system we have found it difficult to persuade people about the value of vocational courses, particularly since we teach the study of

management and not business. However, other faculties have invited us to teach their students, particularly those who are building and developing a job focus into their courses.

- The matching process of mentors and students can be problematic. Sometimes we find that students are intimidated by the high profile of their mentor and fail to make full use of the experience. In other occasions we have found students who claim to be too busy to make sufficient contact with their mentor. We recently conducted a study and have put in place plans to help correct these difficulties.

Successes

The entrepreneurship courses have been experiencing growing numbers which must be a measure of success. We are reaching science and medical students and being invited to teach courses to other disciplines. Student satisfaction with the courses taught is high. However we feel that we must continue to monitor the success of these courses, especially the long term benefits for students. Our steering committee seem satisfied with progress and we are never short of dinner guests!

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